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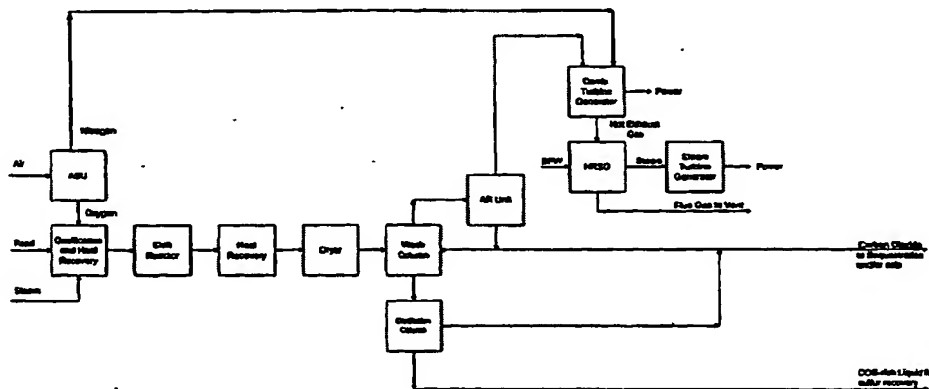
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(54) Title: CONFIGURATIONS AND METHODS OF CARBON CAPTURE



(57) Abstract: An IGCC plant has a precombustion decarbonization unit in which acid gas is removed from a combustion gas before the combustion gas enters a combustion turbine. In one preferred configuration, a sulfur removal unit removes hydrogen sulfide from a feed gas before the desulfurized feed gas enters an autorefrigeration unit in which carbon dioxide is removed. In another preferred configuration, hydrogen sulfide is converted to carbonyl sulfide in a dryer, and the carbonyl sulfide is absorbed in the liquid carbon dioxide that is prepared from the feed gas using autorefrigeration.

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